The productive temperate waters of the North Atlantic support bountiful fisheries.

Many people associate the underwater marine world with idyllic images of coral reefs, clear aqua-blue waters, and colorful fish of the tropics. The tropical region is only one of several major marine biogeographic regions of the world: tropical, temperate (cold and warm), and polar.

While the tropical region spanning the planet's midsection is biologically diverse, providing a favorable habitat for a large variety of marine creatures, the coastal regions of the temperate and polar zones are highly productive. The Southern Ocean surrounding Antarctica, one of the most biologically rich ocean systems in the world, far exceeds the production levels found in any tropical sea.

The biological productivity found in a temperate coastal body of water like the Gulf of Maine could not be matched by a coral reef of equivalent size. Tropical waters are characterized by high light levels and nutrient-poor (crystal-clear) waters.

|  |
| --- |
| world map showing chlorophyll distribution  Though plankton can't be seen from space, NASA's SeaWIFS satellite can image the chlorophyll found in phytoplankton. [NASA SeaWIFS](http://seawifs.gsfc.nasa.gov/SEAWIFS.html), Average type *a* chlorophyll from September 1997 to August 2000. [[1](http://www.gma.org/herring/biology/distribution/comparing_oceans.asp" \l "ref01)] |

If you sample surface sea water around a coral reef or in almost any tropical ocean, put it into a jar and hold it up to the light, you will find it relatively clear and colorless. Do the same with a jar of seawater from the Gulf of Maine and the water is green in color and filled with thousands of tiny specks swirling around - a veritable sea soup. This soup's main ingredient is plankton, the foundation of life in the sea.

The term plankton comes from "planktos", the Greek word for "drifters." Most plankton is invisible to the naked eye, but gives temperate and polar sea water its blue-green to green color. It is also responsible for the great productivity and high biomass levels of temperate seas like the Gulf of Maine.

A recreational SCUBA-diver may consider North Atlantic waters to be murky, but the murkiness goes hand-in-hand with the high productivity that sustains fish populations as well as the birds, marine mammals and humans dependent upon them. Nutrient rich water is the source of the soup of phytoplankton and zooplankton that, in some cases (e.g. herring), can directly sustain an entire fishery.

Of the 13,000 marine fish species found worldwide, the majority of commercially valuable marine species are found in temperate waters. Many of the marine species available in a typical local fish market, including Atlantic herring and abalone, cod and cusk, halibut, hake and haddock, monkfish and mackerel, salmon and swordfish, blue mussels, northern lobsters and king crabs, would never be caught in tropical waters. Wars have been fought and merchants have made fortunes because of the fish stocks found in temperate seas around the globe.